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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/583,870	05/31/2000	Tominari Nomura	Q59513	1881
7590	05/27/2005		EXAMINER	
Sughrue Mion Zinn MacPeak & Seas 2100 Pennsylvania Avenue N W Washington, DC 20037-3202			WILLIAMS, LAWRENCE B	
			ART UNIT	PAPER NUMBER
			2634	
DATE MAILED: 05/27/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/583,870	<b>Applicant(s)</b> NOMURA, TOMINARI	
	<b>Examiner</b> Lawrence B Williams	<b>Art Unit</b> 2634	<input checked="" type="checkbox"/>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see Remarks filed 20 December 2004, with respect to the rejection(s) of claim(s) 1-17 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ichihara (US Patent 6,553,018 B1).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1, 3, 12, 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Ichihara (US Patent 6,553,018 B1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

(1) With regard to claim 1, Ichihara discloses in Fig. 1, transmitter comprising: average power level calculation circuitry (5) determining the time-average power of a digital amplitude signal; conversion circuitry (16A-B) scaling the analog amplitude signal according to a scale factor, converting the scaled digital amplitude signal for transmission to an analog amplitude signal (19) and scaling the analog amplitude signal according to a second factor (22); and control circuitry (23) for complementarily varying said first and second scale factors according to said time-average.

(2) With regard to claim 3, Ichihara et al. also discloses wherein the conversion circuitry is configured to: compare the time-average power of the multiplexed digital amplitude signal with a reference power level and determine a differential power value; and determine said first and second scale factors according to said differential power value (col. 10, lines 6-43).

(3) With regard to claim 12, claim 12 inherits all limitations of claim 1 above as claim 12 discloses the method of the transmitter disclosed in claim 1.

(4) With regard to claim 15, claim 15 inherits all limitations of claims 1, and 12 above.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 6, 7, 8, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara (US Patent 6,553,018 B1) as applied to claims 1, 7 above, and further in view of Sato (US Patent 5, 751,705).

(1) With regard to claim 2, as noted above, Ichihara et al. discloses all limitations of claim 1 above. Ichihara et al. does not however teach wherein said digital amplitude signal is a multiplexed digital amplitude signal in which a plurality of digital spread spectrum signals are multiplexed.

However, Sato discloses in Fig. 3, a code division multiple access base station transmitter wherein the digital amplitude signal is a multiplexed digital amplitude signal in which a plurality of digital spread spectrum signals are multiplexed.

Therefore it would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Sato with the invention of Ichihara et al. to provide suppression of a peak power of a transmission signal in code division multiple access transmitter (col. 3, lines 46-53).

(2) With regard to claim 6, Sato also discloses in Fig. 3, (103, 104, 105) wherein said average power level calculation circuitry is a channel management unit (col. 5, lines 45-56).

(3) With regard to claim 7, claim 7 inherits all limitations of claim 2, above.

(4) With regard to claim 8, claim 8 inherits all limitations of claim 7, above. Furthermore, Ichihara et al. also discloses wherein the conversion circuitry is configured to: compare the time-average power of the multiplexed digital amplitude signal with a reference power level and determine a differential power value; and determine said first and second scale factors according to said differential power value (col. 10, lines 6-43).

(5) With regard to claim 11, claim 11 inherits all limitations of claim 7 above.

Furthermore, Sato also discloses in Fig. 3, (103, 104, 105) wherein said average power level calculation circuitry is a channel management unit (col. 5, lines 45-56).

6. Claims 4, 5, 9, 13, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara et al. (US Patent 6,553,018 B1) as applied to claim 1, 7, 12, 15 above, and further in view of Kakubo et al. (No. Hei 3[1991]-44115).

(1) With regard to claim 4, as noted above, Ichihara et al. discloses all limitations of claim 1 above. He does not however teach wherein the conversion circuitry comprises an interpolator for interpolating said digital amplitude signal and producing an output signal containing a greater number of bits than a number of bits contained in said digital amplitude signal line; a bit shifter for selecting a predetermined number of bits from a plurality of bit positions of said output signal of the interpolator, said plurality of bit positions being determined by said first scale factor; a digital-to-analog converter for converting the output signal of the interpolator to an analog signal; and a gain-controlled amplifier for amplifying the analog signal from the digital-to-analog converter at a level determined by a second scale factor.

However, Kakubo et al. also discloses in Figs. 2 and 6, wherein the conversion circuitry comprises an interpolator (21A) for interpolating said digital amplitude signal and producing an output signal containing a greater number of bits than a number of bits contained in said digital amplitude signal (pg. 6, line 34- pg. 7, line 3); a bit shifter (2) for selecting a predetermined number of bits from a plurality of bit positions of said output signal of the interpolator, said plurality of bit positions being determined by said first scale factor; a digital-to-analog converter

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(12A, 12B) for converting the output signal of the interpolator to an analog signal; and a gain-controlled amplifier (23A) for amplifying the analog signal from the digital-to-analog converter at a level determined by a second scale factor.

Therefore it would have been obvious to one skilled in the art at the time of invention to combine the teachings of Kakubo et al. with the invention of Ichihara et al. as a method of preventing signal degradation in D/A conversions (pg. 3-4, Problems to be solved by invention).

(2) With regard to claim 5, Ichihara et al. also discloses in Fig. 1, a transmitter further comprising: an up-converter (20, 21) for modulating said analog amplitude signal onto a carrier; a power amplifier for amplifying the modulated carrier (22); and detection circuitry (12) for detecting power variation of said power amplifier, wherein said control circuitry (23) is responsive to the detected power variation for controlling a second scale factor.

(3) With regard to claim 9, claim 9 inherits all limitations of claims 4 and 7 above.

(4) With regard to claim 10, claim 10 inherits all limitations of claims 5 and 7 above.

(5) With regard to claim 13, claim 13 inherits all limitations of claims 4, 9 and 12 above.

(6) With regard to claim 14, claim 14 inherits all limitations of claims 5, 10 and 12.

(7) With regard to claim 16, claim 16 inherits all limitations of claim 15 above.

Furthermore, claim 16 inherits all limitations of claims 4 and 9 above.

(8) With regard to claim 17, claim 17 inherits all limitations of claims 5 and 15 above.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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a.) Frank et al. discloses in US Patent 6,636,555 B1 Amplitude Limitation.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw  
May 24, 2005

  
AMANDA T. LE  
PRIMARY EXAMINER